Diascund Reservoir
2007

Diascund Reservoir is owned by the City of Newport News and borders both James City County and New Kent County. The Virginia Department of Game and Inland Fisheries, with agreement from the City of Newport News and James City County, built a public boat ramp, courtesy pier, and parking lot located off of 603 near the town of Lanexa. The reservoir is 1,110 acres in size and has a number of large creek arms. The reservoir has plenty of interesting contour and structure. Several small islands, numerous large points, and bridge crossings all add to the extreme variability of the topography. The use of outboard engines is prohibited on Diascund Reservoir. The use of trolling motors is permitted. Anglers might want to make sure that they have two fully charged batteries if they plan on making long trips toward the upper reaches of the creek arms.

The Virginia Department of Game and Inland Fisheries conducted an electrofishing survey of Diascund Reservoir on April 21, 2006. The last electrofishing survey was on April 29, 2005. The 2006 sample was concentrated in 5 different regions of the reservoir to get a broad spectrum of the fish assemblage present. The water temperatures varied slightly from 16.5 to 17°C. Electrofishing efforts consisted of shocking along the shoreline habitat as close as possible, with the majority of the effort concentrated in the 2 to 4 foot depth range**.** The 5 sample sites were the same sites sampled during the 2005 survey. A total effort of 2 hours of electrofishing yielded the collection of 15 fish species. This report will concentrate primarily upon the seven major fish species: largemouth bass, bluegill, black crappie, chain pickerel, bowfin, yellow perch, and redear sunfish.

Species	# Collected	Largest Length	Average Length
Largemouth Bass	112	20.9"	11.4"
Bluegill	109	8.1”	4.1”
Black Crappie	27	11.6"	8.9"
Chain Pickerel	20	19.2"	14.2"
Bowfin	19	30.4"	20.1"
Yellow Perch	29	9.5"	4.6"
Redear Sunfish	34	8"	6.3"

Table 1. Summary of the April 21, 2006 electrofishing survey for the primary fish species of Diascund Reservoir.

The largemouth bass population within Diascund Reservoir appears to be in decent shape and reasonably balanced. The overall size structure favors the presence of bass in the 12 to 16 inch range. A total of 112 largemouth bass were collected. The CPUE (Catch Per Unit of Effort) for largemouth bass was 56 bass/hr. This catch rate is slightly lower than most waters within the region. Although the catch rate is not very

impressive, it is still higher than the 2005 sample (CPUE 41.5 bass/hr). The average size bass for runs 1, 2 and 5 were very similar. Refer to Table 2 for comparison. The abundance of young bass in the 2006 sample brought down the overall average length of bass collected. The size distribution of the collected bass can be seen on the enclosed length frequency graph.

Run #	1	2	3	4	5
# of bass	23	11	18	22	38
Average size	12.3"	12.5"	10.5"	10"	12.5"
Max size	18.6"	20.1"	18.2"	19.1"	20.9"
CPUE	69	33	43.2	66	65.1

Table 2. Largemouth bass abundance values for each sampling run along with the average size, maximum lengths and CPUE.

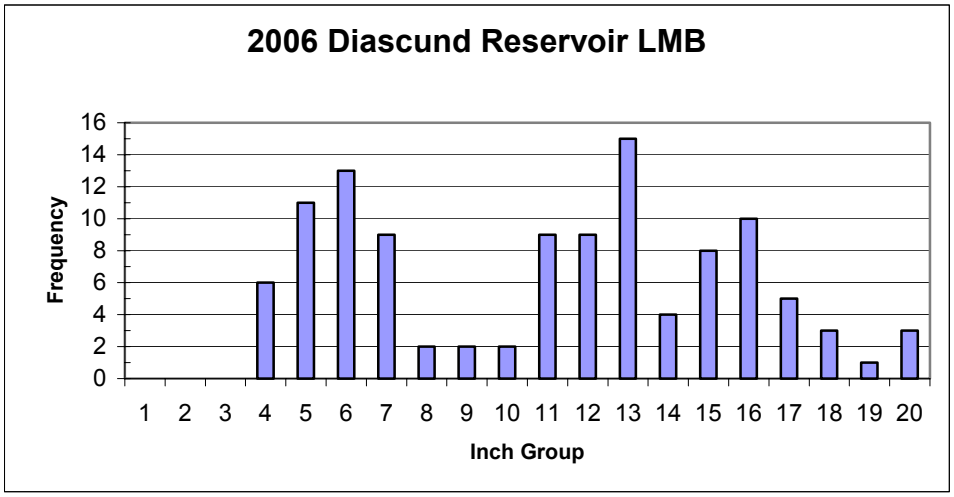

Figure 1. Length frequency distribution of largemouth bass collected from the electrofishing survey of Diascund Reservoir on April 21, 2006 (N 112, CPUE = 56)

The 2006 distribution showed a high proportion of bass in the 11 to 17 inch size range (60 of 112 bass, 53.6%). These bass will provide a great deal of the fishing excitement. The other abundant group of fish was the young bass in the 4 to 7 inch range (39 of 112 bass, 34.8%). This group most likely represents the good recruitment from the 2005-year class. No otoliths were taken for age analysis as all bass were released. The two largest bass were collected in Timber Swamp Creek and they measured 20.9 and 20.75 inches. Our sampling efforts are just a representative picture of the fish community collected along the shoreline and various habitat structures on April 21, 2006. The reservoir has been known to produce bass up to 10 pounds. Larger bass may have been able to escape from the electrofishing boat or may just be living in other areas of the reservoir that were not sampled.

With largemouth bass being the most popular game fish in this country, it has been considered that a "preferred" bass is one that is over 15 inches in length. It is through this size classification that population dynamics are analyzed. The PSD (Proportional Stock Density) is the proportion of bass in the population over 8 inches

(stock size) that are also at least 12 inches (quality-sized). The sample showed an extremely high PSD value of 81, which is a direct reflection of the 60 quality-sized bass. The sample had a total of 74 bass that were stock size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40 – 70 range. The RSD-P (Relative Stock Density of Preferred bass) is the proportion of bass in the population over 8 inches that are also at least 15 inches. The high RSD-P value of 41 is a direct reflection of the 30 preferred fish being collected. The 2006 PSD and RSD-P values are close to the 2005 values (PSD = 76, RSD-P = 47). The lower RSD-P value recorded in 2006 is based upon the collection of five fewer preferred-sized bass.

Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. The higher the value, the better the condition of the fish in terms of overall body mass. Weights were taken on all bass from the first sampling run. Our digital scales malfunctioned from excessive moisture as weights from the remaining runs were unfortunately not taken. The overall relative weight value from run 1 bass was 98. The relative weight values for stock, quality, and preferred bass (>8", >12", >15") were 98, 98 and 96 respectfully. These relative weight values showed and increase from the 2005 sample and fall within the desired range of 95 to 100.

The sample revealed the bluegill fishery to be dominated by fish less than 6 inches in length. Electrofishing effort was able to collect 109 bluegills over the course of two sample runs (45 minutes). This CPUE of 145.3 bluegills/hr shows an increase from the 2005 sample (99 bluegills/hr). The size distribution can be seen on the attached length frequency graph. The average sized bluegill was only 4.1 inches in length. The PSD for bluegill is the proportion of bluegill over 3.15 inches (stock size) that are also at least 5.9 inches (quality size). Due to the number of smaller fish, the bluegill PSD was only 7. The collection consisted of only 7 quality-sized bluegills in the 6 to 8-inch range. The PSD value is well below the desired 20 - 40 range that would represent a balanced bluegill population.

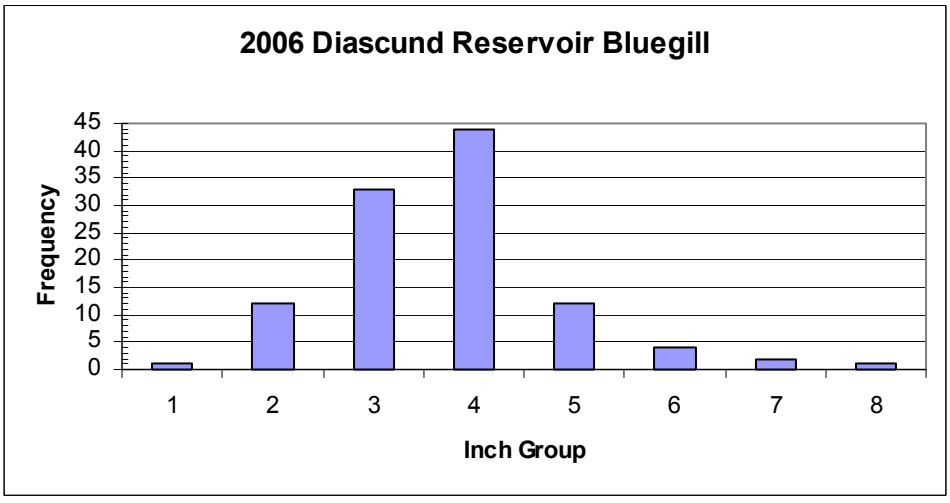

Figure 2. Length frequency distribution of bluegills collected from the electrofishing survey of Diascund Reservoir on April 21, 2006. (N = 109, CPUE 145.3/hr)

Trap net sampling was conducted on Diascund Reservoir on March 12-14, 2006. The main purpose of this type of sampling is to collect the schooling fish such as black crappies and yellow perch that target the shorelines as spawning season approaches. The reservoir was divided in half with 10 trap nets set on the western half of the reservoir the first night and then 10 nets reset to the eastern half of the reservoir on the second night. A total of 20 net nights were used to assist with the evaluation of the fishery. The trap nets were able to collect 18 species of fish. The nets were very successful in catching bluegills. A total of 3,020 bluegills were collected over the course of two nights. Our first net contained an impressive total of 575 bluegills. The majority of the bluegills were in the 3 to 5 inch range. A total of 225 bluegills greater than 6 inches were collected. Only one bluegill greater than 8 inches was collected as that fish measured 8.5 inches in length. The abundance of small bluegills offers a great prey source for the adult predators in the fishery.

The black crappie population appears to be in decent shape with majority of sample consisting of crappies in the 8 to 11 inch range. The electrofishing sample was only able to collect 27 black crappies for a CPUE of 13.5/hr. This catch rate is much lower than the 2005 sample (CPUE = 24.5/hr). Black crappies tend to school in waters deeper than bass and bluegills. Taking this into account, the typical shoreline sample can be very random as to whether or not a school is encountered during a sample run. The five larger crappies in the 12 to 14 inch range encountered during the 2005 sample were not collected during the 2006 survey. The size distribution of the 2006 sample can be seen on the length frequency histogram. The largest black crappie measured 11.6 inches. Sample run 3 along the shoreline near the Route 620 crossing was the most productive site. Although the sample size was small, the average size crappie still measured 8.9 inches.

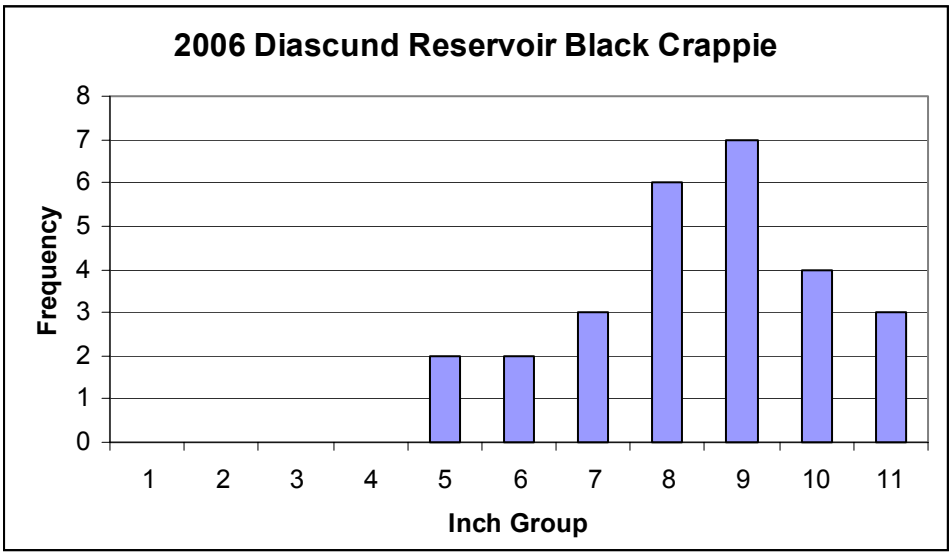

Figure 3. Length frequency distribution of black crappies collected from the electrofishing survey of Diascund Reservoir on April 21, 2006 (N = 27, CPUE = 13.5/hr)

The trap net survey collected a total of 228 black crappies for a catch rate of 11.4 crappies/net night. The western half of the reservoir yielded 115 black crappies and the eastern half produced 113 black crappies. The majority of the sample consisted of crappies in the 7 – 11 inch range. Our two most productive nets were set on the western side near the mouth of Timber Swamp Creek and off the main lake point across from the boat ramp. A sub-sample of 100 crappies was used for length at age analysis. Otoliths were used to verify the average length of each age class. The fish ranged in age from 2 to 9 years old. The average length for each age group was: Age 2 = 3.7 inches, Age 3 = 7.1 inches, Age 4 = 7.8 inches, Age 5 = 9.8 inches, Age 6 = 10.7 inches, Age 7 = 10.4 inches, Age 8 = 11.1 inches and Age 9 = 9.4 inches. The older age groups of Age 7-9 were represented by only a few slower growing fish.

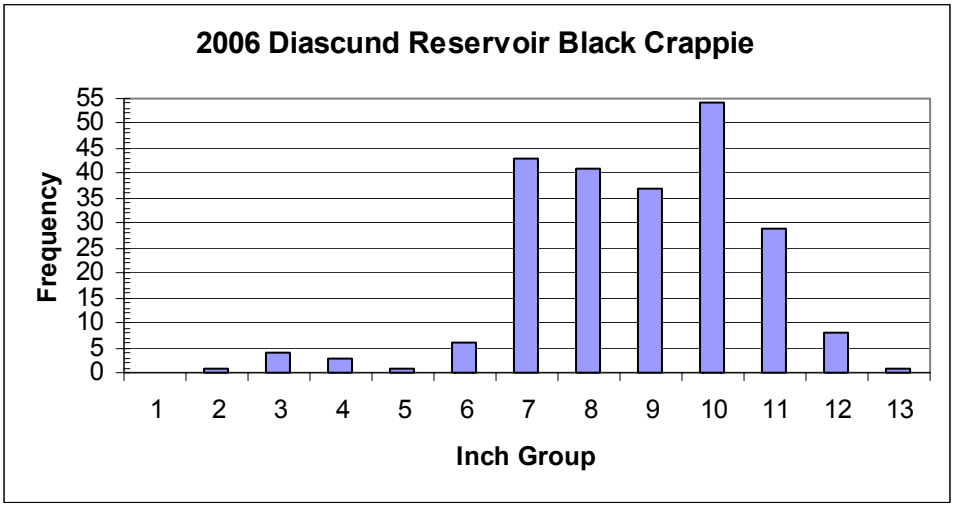

Figure 4. Length frequency distribution of black crappies collected from the trap net sampling of Diascund Reservoir on March 12-14, 2006. (N = 228, CPUE 11.4/net night)

The chain pickerel population offers some diversity to the fishery and will provide some fishing action when the bass are not cooperating. The sample revealed a limited number of chain pickerel. A total of only 20 chain pickerel were collected for a CPUE of 10/hr. This catch rate is slightly lower than the 2005 sample (CPUE = 12/hr). The 2006 size distribution ranged from 8.8 to 23.1 inches. The majority of the chain pickerel were in the 13 to 18-inch range. The average-sized chain pickerel measured 14.2 inches. The largest chain pickerel measured 19.2 inches. Seven additional chain pickerel were collected in the trap net survey and they ranged in size from 16 to 18 inches in length.

The bowfin population was represented with a greater abundance than past samples. The collection of 19 bowfins for a CPUE of 9.5/hr is the highest catch rate on record for Diascund Reservoir electrofishing surveys. The 2005 sample revealed 10 bowfins for a CPUE of 5/hr. The 2006 sample contained 9 bowfins greater than 21 inches in length. The largest bowfin measured an impressive 30.4 inches and weighed approximately 13 pounds. The possibility exists for anglers to catch a bowfin while fishing Diascund Reservoir. There is also a chance that they might hook into one of the larger bowfins greater than 10 pounds.

A total of only 29 yellow perch were collected during the electrofishing. The CPUE of 38.7/hr is not that impressive, but it is still an improvement from the 2005 survey (CPUE = 16/hr). The size distribution was very similar to the 2005 survey and consisted primarily of perch in the 3.5 to 6 inch range. The largest yellow perch measured 9.5 inches. The trap net survey was able to collect a total of 117 yellow perch for a catch rate of 5.85 fish/net night. The majority of these perch were juvenile-sized and measured in the 3.5 to 6 inch range. Only five yellow perch measured larger than 8 inches in length with the largest perch measured at 9.7 inches.

The redear sunfish population appears to be in fair shape even though abundance is limited. A total of 34 redear sunfish were collected for a CPUE of 45.3/hr. This catch rate is much higher than the 2005 sample (CPUE = 22/hr). The 2006 size distribution consisted of a large proportion (47%) of fish in the 7.5 to 9 inch range. The small sample size revealed the average sized redear sunfish to be 6.3 inches in length. The trap net sampling collected an additional 14 redear sunfish with the majority in the 5 to 8 inch range. The largest redear sunfish measured 10.3 inches long.

The remaining 9 species of fish were collected in low abundance during the electrofishing survey. These fish provide some diversity to the fishery and the possibility of exciting an angler from time to time. Table 3 represents a listing of those fish species with some specifics on their size dynamics. A large school of common carp was sampled along a 30-yard stretch of shoreline. These carp were holding close to the bank and most likely in the process of spawning. An estimated count of 50 carp was taken. These carp were all in the 12 to 15 pound range.

Species	# Collected	Min Size (in.)	Max Size (in.)	Average Size (in.)
Brown Bullhead	1		10.9	10.9
Pumpkinseed Sunfish	1		4.3	4.3
Creek Chubsucker	1		7.7	7.7
American Eel	3	15.7	18.9	17.7
Longnose Gar	2	12.7	13.9	13.3
Gizzard Shad	1		12.5	12.5
Golden Shiner	3	6	6.7	6.3
White Perch	9	4.4	6.3	4.9
Common Carp	50*			

* A count of common carp with no length measurements taken

Table 3. Listing of the remaining species from the electrofishing survey with their abundance, minimum and maximum lengths, and average size.

The trap net survey collected a total of 18 species. A variety of the major game fish species have been covered in the text of this report. The trap nets were able to shed some light on the strength of the white perch population. A total of 207 white perch were collected for a CPUE of 10.35/net night. The size distribution ranged from 5 to 12 inches in length with the majority of the fish in the 8 to 11 inch range. The western half of the reservoir was more productive than the eastern half for white perch with 156 of the 207 coming from the western side. The remaining 12 species caught in low abundance during

the trap net survey were: largemouth bass, brown and yellow bullheads, creek chubsuckers, American eels, flier, pumpkinseed sunfish, warmouth, golden and spottail shiners, eastern silvery minnows and gizzard shad.

The electrofishing and trap net surveys of Diascund Reservoir showed a diverse fishery with a combination of 20 species represented. The primary species of largemouth bass, bluegills, black crappies and white perch were the most abundant in our samples. Additional fish species of chain pickerel, bowfin, yellow perch and redear sunfish are present in lower abundance. The reservoir provides some decent bass fishing. Even though our sample did not show it, large bass have been caught from the reservoir. The catch of citation-sized bass has dropped significantly over the last few years. Only 2 largemouth bass citations were reported in 2006. The electrofishing sample revealed a size structure consisting of numerous bass in the 11 to 17 inch range. Anglers are encouraged to try their luck along the banks of Timber Swamp Creek. Our electrofishing results showed this area to be rather productive for decent-sized bass. The bluegill and yellow perch fishery is primarily based on small fish less than 6 inches in length. The electrofishing of black crappies was spotty. The schooling nature of black crappies makes for a difficult time of finding them. The trap net sampling showed a good abundance of black crappies with the majority of the crappies in the 7 to 11 inch range.

The reservoir provides some action for anglers that enjoy catching chain pickerel and bowfin. A few bowfins in the 8 to 10 pound range were collected with the largest one weighing around 13 pounds. The reservoir produces some nice redear sunfish in the 6 to 8 inch range. The reservoir produced a variety of citations in 2006 with 2 largemouth bass, 3 channel catfish, 5 black crappies, 4 longnose gar, 1 blue catfish and 1 bowfin reported. Diascund Reservoir provides an assortment of fishing opportunities. It just depends upon which species of fish you plan to target.